

REMARKS

Claim Objections

The Examiner has objected to Claims 1, 11, 12, and 22, contending the claims contain informalities related to the term “unsaturated aliphatic diacid anhydride.” Applicants traverse.

Essentially, the Examiner is contending that the term would not appreciable to a person skilled in the art. However, the applicants disagree because the term is used is previously granted U.S. patents. Notably, U.S. Patent Serial No. 5,707,732 uses the term. In the ‘732 patent, the inventors provide the following phrase “wherein resins (i) or (ii) are modified with an unsaturated aliphatic diacid anhydride through grafting or copolymerization.” The inventors further provide examples of the anhydrides, including maleic anhydride, itaconic anhydride, citraconic anhydride, 5-norbornene-2,3-dicarboxylic anhydride, 4-methylcyclohexene-1,2-dicarboxylic anhydride, and 4-cyclohexene-1,2-dicarboxylic anhydride.

Considering the use of the term in issued U.S. patents, applicants respectfully request the Examiner to withdraw the objection.

The Examiner has further objected to Claims 4 and 6, contending that the claims contain informalities based on the use of the term “being.” While the applicants contend that the use of the term “being” is generally accepted in the drafting of claims, the applicants have amended Claims 4 and 6 to expedite allowance of the claims. In view of the amendments, applicants respectfully request the Examiner to withdraw the objection.

Claim Rejections – 35 USC § 112, Second Paragraph

The Examiner has rejected Claims 1-4, 6, 7, 11, 12, 14, 22, and 23 under 35 USC § 112, second paragraph, contending that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The Examiner observes that Claims 1, 3, 11, 12, 14, and 22 recite a “density less than about” 0.95, 0.92, or 0.90, a melting point “above about 90 °C,” a polydispersity index of “less than about 3” and a LOI of “at least about 37.” Essentially, the Examiner contends that the claims are indefinite because it is not clear where the upper and lower bounds of these ranges lie exactly.

Each of the physical properties (density, melting point, polydispersity index, and Limiting Oxygen Index) are used in reference to polyethylene or a composition made from or containing polyethylene. These properties are generally used with regard to polyethylene or its compositions. Oftentimes, the use is without an upper or lower limit.

Notably, the Examiner has cited three references against the claims of the present applications. Those references demonstrate the use of these physical properties without upper and lower limits. U.S. Patent No. 5,218,707 claims a fire retardant composition comprising an olefinic copolymer, yet the claims do not set forth any physical properties for the olefinic copolymer. U.S. Patent No. 5,288,785 claims a flame retardant composition comprising a linear polyethylene having a density equal to or less than 0.915 gram per cubic centimeter, yet Claim 1 of the '785 patent does not specify a lower limit for the polyethylene's density. Moreover, when the '785 patent refers to other physical properties, such as melt index of the polyethylene as in Claim 2, the inventors describe the property using the term "about." U.S. Patent No. 6,025,422 claims a composition comprising a polymerization or copolymerization product of one or more ethylenically unsaturated monomers. However, the inventors do not define any physical properties of the polymerization or copolymerization product until a dependent claim and then using the term "about."

The cited references demonstrate that persons skilled in the art define olefinic polymers by specifying an upper or lower limit, using the term "about," or simply identifying the composition of matter as a polymerization or copolymerization product without more particularly defining its physical properties. The present claims achieve at least the minimum description as achieved by the cited references. However, the present claims go much further in defining the particular compositions by defining several physical properties rather than relying on one property. As such, a person skilled in the art can readily determine what the applicants contend is their invention. Accordingly, applicants respectfully request the Examiner to withdraw the rejection of these claims.

The Examiner has rejected Claims 1-4, 6, 7, 11, 12, 14, 22, and 23 under 35 USC § 112, second paragraph, contending that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The Examiner

contends that the term “ultra high molecular weight polysiloxane” is a relative term which renders the claims indefinite.

Applicants have amended Claims 1, 11, 12, and 22 to specify that the ultra high molecular weight polysiloxane has its viscosity greater than 1,000,000 centistokes at room temperature. This amendment is supported in the specification at page 7, lines 21-31. Applicants believe that the amendment obviates the rejection of Claims 1, 11, 12, and 22, and the claims that depend therefrom. Accordingly, applicants respectfully request the Examiner to withdraw the rejection of these claims.

The Examiner has rejected Claims 12 and 14 under 35 USC § 112, second paragraph, contending that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The Examiner contends that the term “communication media” is indefinite. Applicants traverse.

The term “communication media” is used in granted patents in the same way as the present application. For example, U.S. Patent No. 5,707,732 is directed to a cable comprising one or more electrical conductors or communications media, or a core of two or more electrical conductors or communications media, each electrical conductor, communications medium, or core being surrounded by a composition. See abstract and Claims 1-3 of the '732 patent. As such, applicants believe that a person skilled in the art would readily understand the term “communications media.” Accordingly, applicants respectfully request the Examiner to withdraw the rejection of these claims.

Claim Rejections – 35 USC § 102 (b)

The Examiner has rejected Claims 1, 2, 4, 6, 7, 12, 22, and 23 under 35 USC 102(b), contending that Smith et al. (U.S. Patent No. 5,218,027) anticipates the claimed subject matter. Applicants traverse.

As the Examiner observes, Smith teaches a fire-retardant thermoplastic composition containing an ethylene-(meth)acrylic copolymer, an organopolysiloxane having a viscosity of up to 300×10^6 cP, aluminum trihydrate/magnesium dehydrate flame retardant, and an ethylene-

propylene copolymer grafted with maleic anhydride. The Examiner casually observes in a parenthetical that the inventors essentially teach that the utility of the organopolysiloxane is found in those organopolysiloxanes having their viscosity in the range 100,000 to 900,000 cP. More usefully, the organopolysiloxanes would have their viscosity in the range of 30,000 to 600,000 cP.

Essentially, Smith teaches away from using ultra high molecular weight polysiloxanes having their viscosity greater than 1,000,000 centistokes. While seemingly the polysiloxanes of the present invention are within the broad range of the teaching of the cited reference (up to 300×10^6 cP), the cited reference teaches away from the use of the polysiloxanes of the present invention as presently claimed. As such, the present invention is a selection over the cited reference, from which the cited reference essentially teaches away. Accordingly, applicants respectfully request the Examiner to withdraw the rejection of these claims as presently amended.

Claim Rejections – 35 USC § 103(a)

The Examiner has rejected Claims 3, 11, and 14 under 35 USC 103(a), contending that Smith et al. (U.S. Patent No. 5,218,027) in view of Jow et al. (U.S. Patent No. 5,288,785) renders the claimed subject matter obvious. Applicants traverse.

As the Examiner observes with regard to the rejections under 35 USC 102(b), Smith teaches a fire-retardant thermoplastic composition containing an ethylene-(meth)acrylic copolymer, an organopolysiloxane having a viscosity of up to 300×10^6 cP, aluminum trihydrate/magnesium dehydrate flame retardant, and an ethylene-propylene copolymer grafted with maleic anhydride. As previously noted, the Examiner observes in a parenthetical that the inventors essentially teach that the utility of the organopolysiloxane is found in those organopolysiloxanes having their viscosity in the range 100,000 to 900,000 cP. More usefully, the organopolysiloxanes would have their viscosity in the range of 30,000 to 600,000 cP.

Essentially, Smith teaches away from using ultra high molecular weight polysiloxanes having their viscosity greater than 1,000,000 centistokes. While seemingly the polysiloxanes of the present invention are within the broad range of the teaching of the cited reference (up to 300

x 10^6 cP), the cited reference teaches away from the use of the polysiloxanes of the present invention as presently claimed. As such, the present invention is a selection over the cited reference, from which the cited reference essentially teaches away. The addition of Jow et al as a reference does not remove the teaching away from the presently claimed invention. Accordingly, applicants respectfully request the Examiner to withdraw the rejection of these claims as presently amended.

The Examiner has rejected Claims 1-4, 6, 7, 11, 12 14, 22, and 23 under 35 USC 103(a), contending that Hall et al. (U.S. Patent No. 6,025,422) in view of Jow et al. (U.S. Patent No. 5,288,785) renders the claimed subject matter obvious. Applicants traverse.

Armed with the teaching of the present application, the Examiner contends that Hall discloses a flame retardant cable insulation composition comprising hydrated inorganic filler, a blend of an aliphatic polyketone and a copolymer of ethylene and ethylenically unsaturated polar monomer, an ethylene/C4-C8 alpha olefin copolymer, and a silicone processing aid, which is an ultra high molecular weight polydimethylsiloxane dispersed on silica. Significantly, the Examiner contends that the inventors indicate that the compositions may include a coupling agent that is an olefinic copolymer having highly polar functional groups such as maleic anhydride.

Yet, the Examiner improperly characterizes the inventors' description. More particularly, the inventors provide a laundry list of "suitable" polymeric coupling agents – olefinic copolymers and terpolymers containing about 0.1 wt% to about 10 wt% of reactive or highly polar functional groups , such as acrylic acid, methacrylic acid, and higher organic acids; maleic anhydride and other unsaturated anhydrides; and vinyl silanes. The Examiner has merely selected the maleic anhydride from the list in view of the teaching of the applicants' claims. Hall provides no basis for selecting maleic anhydride. In fact, the inventors actually focus their attention on the use of an ethylene methyl acrylate acrylic acid terpolymer as being particularly useful as a polymeric coupling agent. The Examiner essentially rejects the specific election of the Hall inventors.

Without the teaching of their claims, the applicants believe that Hall in view of Jow fails to teach or provide motivation for a person skilled in the art to prepare the composition, cables,

or articles of manufacture of the present application. As such, applicants urge the Examiner to withdraw the rejection of the claims as presently pending.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

Electronic signature: /Kevin R. Hansbro/
Kevin R. Hansbro
Registration No.: 38,485
THE DOW CHEMICAL CO.
2030 Dow Center
Midland, Michigan 48674
(979) 238-9041